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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WOLDEMARIAM, AKILILU K	
ART UNIT	**PAPER NUMBER**
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,253	CHAPOULAUD, ERIC	
	Examiner	Art Unit	
	Aklilu k. Woldemariam	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/23/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. Applicant's amendment filed on August 23, 2007 has been entered. Claims 1-38 are pending; with claims 1 and 20 are independent. Claim 20 has been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-38** are rejected under 35 U.S.C. 103(a) as being unpatentable over DeForest (U.S. Patent number 4, 538, 299) in view of Schaffalizky (May 28-31, 2002, Vol. 2350/2002, pages 1-17).

Regarding claims 1 and 20, DeForest discloses **method and an apparatus for automatically locating a boundary of an object of interest in a field of view** (see column 1, lines 55-56), **the method comprising forming an electronic image of the field of view containing the object, wherein the electronic image is formed of a plurality of image pixels** (see column 1, lines 55-60); **identifying groups of the image pixels that represent edge segments of the object** (see column 1, lines 55-61).

DeForest does not discloses **forming patches around the image pixel groups, wherein each patch is dimensioned and positioned to entirely contain one of the image pixel groups; and performing a patch merge process that merges any two of the patches together that meet a predetermined proximity threshold relative to**

each other to form a merged patch that is dimensioned and positioned to entirely contain the two merged patches, wherein the merge process continues for any of the patches and the merged patches meeting the predetermined proximity threshold until none of the patches and the merged patches meet the predetermined proximity threshold.

However, Schaffalitzky discloses **forming patches around the image pixel groups, wherein each patch is dimensioned and positioned to entirely contain one of the image pixel groups** (see fig.5 and abstract); **and performing a patch merge process that merges any two of the patches together that meet a predetermined proximity threshold relative to each other to form a merged patch that is dimensioned and positioned to entirely contain the two merged patches, wherein the merge process continues for any of the patches and the merged patches meeting the predetermined proximity threshold until none of the patches and the merged patches meet the predetermined proximity threshold** (see fig.5,6 and abstract and page 3 , 4 and 6).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Schaffalitzky's forming patches around the image pixel groups, wherein each patch is dimensioned and positioned to entirely contain one of the image pixel groups in Deforest's automatically locating a boundary of an object of interest in a field of view because it will allow to enable efficient multiple view matching, [Schaffalitzky's, see abstract].

Regarding claims 2 and 21, Schaffalitzky discloses **the method and apparatus of claims 1 and 20, further comprising associating all the edge segments contained within one of the merged patches as representing the boundary of the object** (see fig.5 and 6, and page 6).

Regarding claims 3 and 22, Schaffalitzky discloses **the method and an apparatus of claims 1 and 20, wherein the predetermined proximity threshold is a predetermined number of the image pixels shared by any of the patches and merged patches that overlap each other** (see fig. 5 and 6, page 1, 4 and 6).

Regarding claims 4 and 23, Schaffalizky discloses **the method and an apparatus of claims 1 and 20, wherein the predetermined proximity threshold is a predetermined distance between any of the patches and merged patches** (see fig.5 and 6, and pages 1, 4 and 6).

Regarding claims 5 and 24, Schaffalizky discloses **the method and an apparatus of claims 4 and 23, wherein the predetermined distance is measured from boundaries of the patches and merged patches** (see fig.5, 6 and page 1 and 4).

Regarding claims 6 and 25, Schaffalizky discloses **the method and an apparatus of claims 4 and 24, wherein the predetermined distance is measured from center portions of the patches and merged patches** (see fig.5, 6 and page 1 and 4).

Regarding claims 7 and 26, Schaffalizky discloses **the method and an apparatus of claims 1 and 20, wherein the predetermined proximity threshold is**

calculated from the sizes and separation distances of the patches and merged patches (see fig.5 and page 4, and 6).

Regarding claims 8 and 27, Schaffalizky discloses **the method and an apparatus of claims 1 and 20, wherein the forming of the patches further comprises dimensioning each of the patches as small as possible while still entirely containing one of the image pixel groups** (see fig.5 and page 4 and 6).

Regarding claims 9 and 28, Schaffalizky discloses **the methods and an apparatus of claims 8 and 27, wherein after the dimensioning of the patches as small as possible, the forming of the patches further comprises expanding each of the patches by moving wall portions of the patch away from a center of the patch by a predetermined distance** (see fig.5 and page 4 and 6)

Regarding claims 10 and 29, Schaffalizky discloses **the method and an apparatus of claim 9, wherein each of the patches has a rectangular shape** (see fig.5).

Regarding claims 11 and 30, DeForest discloses **the method and an apparatus of claims 1 and 20, wherein the identifying of the groups of image pixels that represent edge segments of the object** (see column 1, lines 55-56) **comprises forming a background level image of the field of view, wherein the background level image is formed of a plurality of background level pixels each corresponding in location to one of the image pixels and each having a pixel value** (see column 1, lines 55-60)**; and identifying which of the object pixels correspond to an edge of the object** (see column 1, lines 55-60).

DeForest does not disclose **classifying as an object pixel each of the image pixels having a pixel value that varies by at least a predetermined amount from the pixel value of the corresponding background level pixel.**

However, Schaffalizky discloses **classifying as an object pixel each of the image pixels having a pixel value that varies by at least a predetermined amount from the pixel value of the corresponding background level pixel** (see fig.6 and page 6).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Schaffalitzky's classifying as an object pixel each of the image pixels having a pixel value that varies by at least a predetermined amount from the pixel value of the corresponding background level pixel in Deforest's automatically locating a boundary of an object of interest in a field of view because it will allow to enable efficient multiple view matching, [Schaffalitzky's, see abstract].

Regarding claims 12 and 31, DeForest discloses **the method and an apparatus of claims 11 and 30, wherein the forming of the background level image of the field of view further comprises forming N background electronic images of the field of view not containing any objects of interest, wherein each of the background electronic images is formed of a plurality of background pixels each corresponding in location to one of the background level pixels and each having a pixel value, and wherein N is a positive integer** (see column 1, lines 55-65).

DeForest does not disclose **generating each one of the background level pixels by calculating a median value of the pixel values for the background pixels corresponding to the one background level pixel.**

However, Schaffalitzky discloses **generating each one of the background level pixels by calculating a median value of the pixel values for the background pixels corresponding to the one background level pixel** (see page 8)

Regarding claims 13 and 32, DeForest discloses **the method and an apparatus of claims 12 and 31, wherein the formation of the N background electronic images of the field of view includes flowing transparent fluid through the field of view** (see column 2, lines 30-47).

Regarding claims 14 and 33, Schaffalizky discloses **the method and an apparatus of claims 12 and 31, wherein the forming of the background level image of the field of view further comprises standardizing average values (normalized image value) of the background pixel values for each of the N background electronic images before the generation of the background level pixels** (see fig.6 and page 5 and 6).

Regarding claims 15 and 34, Schaffalizky discloses **the method of claim 14, wherein the standardizing average values (normalized image value) of the background pixel values further comprises creating a histogram for each one of the N background electronic images, wherein each of the histograms has a peak value that corresponds to ma average value of the background pixel values for one of the N background electronic images** (see fig.6 and page 6); **selecting a**

predetermined average pixel value (see page 5 and 6); **and adjusting the background pixel values for the N background electronic images so that the histograms thereof all have peak values generally equal to the predetermined average pixel value** (see fig.6 and page 6).

Regarding claims 16 and 35, Schaffalizky discloses **the method and an apparatus of claims 15 and 34, wherein the predetermined average pixel value is selected such that the adjusted background pixel values do not exceed a maximum pixel value thereof** (see page 4, 6 and 7).

Regarding claims 17 and 36, Schaffalizky discloses **the method and an apparatus of claims 11 and 30, wherein the classifying as an object pixel further includes creating a binary image of the electronic image of the field of view containing the object, wherein the binary image is formed of a plurality of binary pixels each corresponding in location to one of the image pixels** (see page 1, 4 and 6), **wherein each of the binary pixels is assigned to a first value if the corresponding image pixel value varies by at least a predetermined amount from the pixel value of the corresponding background level pixel, and is assigned to a second value if the corresponding image pixel value does not vary by at least the predetermined amount from the pixel value of the corresponding background level pixel** (see page 1, 4, 6 and 7).

Regarding claims 18 and 37, Schaffalizky discloses **the method and an apparatus of claims 17 and 36, wherein the identifying which of the object pixels correspond to an edge of the object includes re-assigning any of the binary pixels**

assigned with the first value to the second value that are surrounded by others of the binary pixels all originally assigned with the first value (see fig3 and page 4).

Regarding claims 19 and 38, Schaffalikzy discloses **the method and an apparatus of claims 1 and 20, wherein each of image pixels has a value, and wherein the forming of the electronic image of the field of view containing the object further comprises creating a histogram the electronic image containing the object, wherein the histogram has a peak value that corresponds to an average value of the image pixel values** (see fig.6 and page 5 and 6)**; selecting a predetermined average pixel value** (see page 4)**; and adjusting the image pixel values so that the histogram has a peak value generally equal to the predetermined average pixel value** (see page 4 and 6).

Response to Arguments

4. Applicant's argument filed August 23, 2007 have been respectfully considered, applicant's arguments are persuasive.

Regarding 35 U.S.C 101 rejection of claims 1-38, the examiner respectfully withdraws this rejection. And **regarding 35 U.S.C 112**, the examiner respectfully withdraws this rejection.

Regarding 35 U.S.C 103 rejection of claim, the applicant's argued that with references (Huttenlocher) does not disclose the claim inventions. The examiner agrees that Huttenlocher does not disclose the claim inventions. However the examiner rejects the claim inventions with references (DeForest and Schaffalizky).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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10/15/2007

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